

inserting one or more integration sequences comprising at least one recombination site into at least one nucleic acid molecule; and

transferring one or more nucleic acid molecules comprising recombination sites into one or more vectors in the presence of one or more recombination proteins.

Please substitute the following claim 16 for currently pending claim 16:

16. (Twice amended) A method for producing a nucleic acid molecule or a population of nucleic acid molecules comprising:

inserting one or more integration sequences, said one or more integration sequences comprising at least one recombination site, into at least one nucleic acid molecule thereby producing a nucleic acid molecule comprising at least a first and a second recombination site; and

causing said at least first and second recombination sites to recombine in the presence of at least one recombination protein.

(c) Please insert **new** claims 44-57:

44. (New) A method of producing a nucleic acid molecule or a population of nucleic acid molecules, comprising:

(a) obtaining a first nucleic acid molecule comprising at least a first segment which comprises at least a first and a second recombination site, wherein said segment comprises at least one integration sequence;

- (b) forming a mixture by mixing said first nucleic acid molecule with at least one second nucleic acid molecule comprising at least a third and fourth recombination site in the presence of at least one recombination protein; and
- (c) incubating said mixture under conditions favoring recombination at least between said first and third recombination sites and at least between said second and fourth recombination sites, thereby transferring said first segment from said first nucleic acid molecule to said second nucleic molecule.

45. (New) The method of claim 44, wherein said first segment is flanked on one side by said first recombination site and is flanked on the other side by said second recombination site.

46. (New) The method of claim 44, wherein said recombination sites are site-specific recombination sites.

47. (New) The method of claim 44, wherein said recombination sites are selected from the group consisting of *loxP*, *attB*, *attP*, *attL*, *attR*, FRT, a recombination site recognized by a resolvase, a bacterial transposable element, an integrating virus, an IS element, a P element of *Drosophila*, a bacterial virulence factor and a mobile genetic element for a eukaryotic organism.

48 (New) The method of claim 44 or claim 45, wherein at least one of said recombination sites is an *att* site or a mutant or derivative thereof.

49. (New) The method of claim 44 or claim 45, wherein at least one of said recombination sites is an *att* site.

50. (New) The method of claim 48, wherein said *att* site is selected from the group consisting of *attB*, *attP*, *attL* and *attR*, or a mutant or derivative thereof.

51. (New) The method of claim 49, wherein said *att* site is selected from the group consisting of *attB*, *attP*, *attL* and *attR*.

52. (New) The method of claim 44 or claim 45, wherein at least one of said recombination sites is a *lox* site or a mutant or derivative thereof.

53. (New) The method of claim 51, wherein at least one of said recombination sites is a *lox* site.

54. (New) The method of claim 52, wherein said *lox* site is a *loxP* site or a mutant or derivative thereof.

55. (New) The method of claim 53, wherein said *lox* site is a *loxP* site.

56. (New) The method of claim 44, further comprising selecting for said second nucleic acid molecule comprising said first segment.

57. (New) The method of claim 44, wherein said recombination takes place *in vitro*.